HARTCROWSER

Earth and Environmental Technologies

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J-2296-06

July 29, 1996

Mr. Gregory A. Rapp
Construction Services Manager
Potlatch Corporation
1100 Railroad Avenue
P.O. Box 386
St. Maries, Idaho 83861

Re: First Quarter Performance Report for 1996
Avery Landing Recovery System

Dear Mr. Rapp:

Hart Crowser is pleased to present the First Quarter Performance Report for 1996 for the free product recovery system at the Avery Landing site. This letter report presents the first quarter groundwater elevation and product thickness measurements.

GROUNDWATER AND PRODUCT QUARTERLY MONITORING

HC-4 ??

Four extraction wells (EW-1, EW-2, EW-3, and EW-4) , four monitoring wells (HC-1, MW-4, MW-5, and MW-11), and two piezometers (P-1, and P-2) were monitored on July 11, 1996. The locations of the monitoring points have been indicated in previous quarterly monitoring reports. At each monitoring location, a depth to product, product thickness, and depth to groundwater measurements were recorded. These measurements are presented with those of previous monitoring events in Table 1 at the end of the text. If a location indicated the presence of product but we were unable to obtain product-related measurements, it is indicated in Table 1 as a sheen in depth to product column. The river elevation was also monitored by taking measurements and extrapolating between the river surface slope and corresponding datum.

The only extraction wells with measurable product thicknesses were EW-2 and EW-3. EW-2 contained 0.63 foot of product and EW-3 contained 0.11 foot of product. Wells HC-4 and MW-11 continue to have product present at 1.35 and 3.66 feet, respectively. Monitoring at EW-4 and MW-4 indicated a sheen but because of the thin layer of the product, a measurement was not obtained. Well HC-1 and the piezometers did not indicate the presence of product.

- why weren't we notified?

The product pumps were down for 3 days because the air compressor shut down. This may have contributed to the excess product thickness in EW-2. With the exception of trench containment, the general trends observed during this round of monitoring were consistent with previous rounds. As the State is aware, complete trench containment was not observed because two of the water pumps were kicking off during the repair of the air compressor. The pump relays were reset after the monitoring event.

PROJECT SCHEDULE

Table 2 presents the project schedule for the remainder of 1996. As indicated and discussed with you during our latest visit, we will monitor and prepare two more Quarterly Performance reports and one Annual Report for 1996. If you should decide that any of these dates need to be altered, please let us know as soon as possible.

Table 2 - Avery Landing Recovery System
Remaining Project Schedule for 1996

Remaining Schedule	Date
Conduct 2nd Quarter Monitoring	September 11, 1996
Submit 2nd Quarter Performance Report	October 12, 1996
Conduct 3rd Quarter Monitoring	November 5, 1996
Submit 3rd Quarter Performance Report	December 12, 1996
Submit Annual Report	January 27, 1997

LIMITATIONS

Work for this project was performed, and this letter prepared, in accordance with generally accepted professional practices for the nature and conditions of the work completed in the same or similar location, at the time the work was performed. It is intended for the exclusive use of the Potlatch Corporation for specific application to the referenced property.

If additional information or clarification is required, please call Terry Montoya or Barry Kellems at (206) 324-9530.

Sincerely,

HART CROWSER, INC.

TERRY MONTOYA
Project Engineer

BARRY L. KELLEMS, P.E.
Associate

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Attachments:

Table 1 - Avery Landing Groundwater Monitoring Data

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Monitoring Location	Date	Depth to Product	Depth to Water	Product Thickness	T.O.C. Elevation	Groundwater Elevation
EW-1	10/27/94	ND	11	0	95.34	84.34
	6/30/95	ND	10.9	0	95.34	84.44
	9/21/95	11.25	11.27	0.02	95.34	84.07
	7/11/96	ND	9.74	0	95.34	85.60
EW-2	10/27/94	ND	10.37	0	95.24	84.87
	6/30/95	10.57	10.89	0.32	95.24	84.35
	9/21/95	13.9	13.92	0.02	95.24	81.32
	7/11/96	11.03	11.66	0.63	95.24	83.58
EW-3	10/27/94	ND	10.05	0	95.78	85.73
	6/30/95	9.35	9.8	0.45	95.78	85.98
	9/21/95	10.92	11.08+	0.16	95.78	84.70
	7/11/96	8.53	8.64	0.11	95.78	87.14
EW-4	10/27/94	ND	8.05	0	94.32	86.27
	6/30/95	7.84	7.85	0.01	94.32	86.47
	9/21/95	8.22	8.24	0.02	94.32	86.08
	7/11/96	Sheen	6.44	0	94.32	87.88
HC-1	10/27/94	ND	13.25	0	97.5	84.25
	6/30/95	ND	12	0	97.5	85.50
	9/21/95	NM	13.42	0	97.5	84.08
	7/11/96	ND	11.92	0	97.5	85.58
HC-4	10/27/94	13.3	15.34	2.04	98.94	83.60
	6/30/95	11.89	15.49	3.6	98.94	83.45
	9/21/95	13.67	NM	NM	98.94	85.27
	7/11/96	11.58	12.93	1.35	98.94	86.01
MW-4	9/14/94	ND	12.88	0	99.76	86.88
	6/30/95	ND	10.19	0	99.76	89.57
	9/21/95	ND	11.95	0	99.76	87.81
	7/11/96	Sheen	10.18	0	99.76	89.58
MW-5	10/27/94	ND	10.45	0	97.76	87.31
	6/30/95	ND	9.13	0	97.76	88.63
	9/21/95	ND	10.83	0	97.76	86.93
	7/11/96	ND	8.98	0	97.76	88.78
MW-11	9/14/94	12	NA	NA	98.16	NA
	6/30/95	5.54	7.25	1.71	98.16	90.41
	7/11/96	6.34	10.00	3.66	98.16	88.16

Table 1 - Avery Landing Groundwater Monitoring Data

Monitoring Location	Date	Depth to Product	Depth to Water	Product Thickness	T.O.C. Elevation	Groundwater Elevation
P-1	10/27/94	ND	17.31	0	101.42	84.11
	6/30/95	ND	16.72	0	101.42	84.70
	9/21/95	ND	17.4	0	101.42	84.02
	7/11/96	ND	15.87	0	101.42	85.55
P-2	10/27/94	ND	15.87	0	100.06	84.19
	1/0/00	ND	15.26	0	100.06	84.80
	9/21/95	ND	16.04	0	100.06	84.02
	7/11/96	ND	14.52	0	100.06	85.54
River EW-1	10/27/94					83.12 *
	6/30/95					84.03 **
	9/21/95					83.30
	7/11/96					84.80 ***
River EW-2	10/27/94					84.41
	6/30/95					85.32
	9/21/95					83.53
	7/11/96					85.03
River EW-3	10/27/94					85.16 *
	6/30/95					86.07
	9/21/95					84.45
	7/11/96					85.95
River EW-4	10/27/94					85.16 *
	6/30/95					87.40
	9/21/95					86.82
	7/11/96					88.32

All measurements in feet.

* River elevation was extrapolated from the river surface slope measured in 1995 and the river elevation measured south of EW-2 in 1994.

** River elevation was extrapolated from river surface slope, based on river elevations measured south of EW-2, EW-3, and EW-4 in 1995.

*** River elevation was extrapolated from river surface slope, based on river elevations measured south of EW-2, EW-3, and EW-4 in 1996.

+ Value Estimated

ND - Not Detected

NA - Not Available

NM - Not Measured